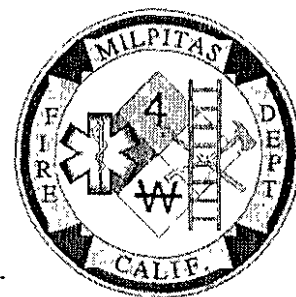


MEMORANDUM

Office of the Fire Chief



To: Honorable Mayor and Councilmembers
Through: Tom Wilson, City Manager and Blair King, Assistant City Manager
From: Bill Weisgerber, Fire Chief *BW*
Subject: Purchase of Fire Apparatus that Conform to Midtown Standards
Date: May 10, 2004

BACKGROUND:

In adopting the Midtown Specific Plan, Council acknowledged a new vision for residential development (realigned setbacks and street widths to create a pedestrian friendly environment), and that impacts to various municipal services resulting from the implementation of the Midtown Plan would be addressed as build-out of Midtown occurred. Density requirements of the Midtown Specific Plan, as interpreted by the development community, are resulting in narrow streets and tighter turning dimensions. These smaller turning radii and street widths are incompatible with the performance specifications of the Fire Department's ladder truck and engines.

In order to serve the land use configurations of Midtown area projects (e.g., Parc Place, KB Elmwood, Senior Housing, Library) and achieve the desired density configurations; fire apparatus equipment must conform to the environment rather than the environment conforming to the equipment.

A deliberate, thoughtful process by Fire Department staff has gone into analyzing the relationship of site designs to apparatus deployment and turning templates. Fire staff has been cognizant of this potential concern since the inception of the Midtown Specific Plan in October 2000, and expressed the desire to work with Planning staff to eventually address the matter once density configurations have been interpreted and confirmed. Staff is recommending a ladder truck and engine that have a shorter wheelbase and tighter turning radii, for deployment in the Midtown area. Discussions between fire staff and fire association leaders have resulted in consolidation of thought on addressing response and deployment of resources in the high-density configurations of Midtown. Other jurisdictions that have ordered similar apparatus for the purpose of maneuverability in tighter street configurations include: Santa Clara County Fire Department, Aptos-LaSelva Fire Protection District; Sacramento Metro Fire Department, Corte Madera Fire Department, and Ross Valley Fire Department (a list is included as an attachment).

The recommended apparatus are already part of bona fide governmental bid processes (Palatine, Illinois for the Ladder Truck; and Kingman, Arizona for the Engine). This process is sanctioned in

section I-2-5.0, "Purchasing through a Governmental Agency," of the Milpitas Municipal Code, making both apparatus readily available at competitive bid prices.

The bids have been awarded to Pierce Manufacturing, Inc., of Appleton Wisconsin, for a 75' Heavy Duty Ladder, with a wheelbase length only 7.00" longer than our current engine; and, a short-body engine that can be built with a wheelbase between 30.00" and 46.50" shorter than our current engine.

The Milpitas Fire Department already operates three Pierce fire engines in the fleet, which not only offers the benefit of vehicle standardization for the Fire Engineers who operate the equipment and the vehicle maintenance staff who maintain the equipment, but also economies of scale for stocking of parts and service costs.

The timing of this purchase has recently become critical, due to a worldwide shortage of steel, which will lead to a metal surcharge of \$24,500 per vehicle on all orders placed after May 31. However, regardless of this current impetus, it is the Fire Department's desire to have the apparatus in service prior to the beginning of construction framing on the KB Elmwood project. To avoid unnecessary cost increases and expedite the timing of equipment delivery, staff recommends the Redevelopment Agency advance and appropriate funds for the purchase of these two apparatus before the June 1 metal surcharge takes effect—followed by a reimbursement from Midtown projects, at a later date. The cost estimate for each of these two apparatus is \$625,000 for the ladder truck; and \$355,000 for the engine.

RECOMMENDATION:

Authorize the Redevelopment Agency to purchase and equip one Ladder Truck and one Fire Engine that conform to the Midtown Specific Standards, taking advantage of the previously conducted governmental bid and avoiding metal surcharges taking effect June 1, 2004.

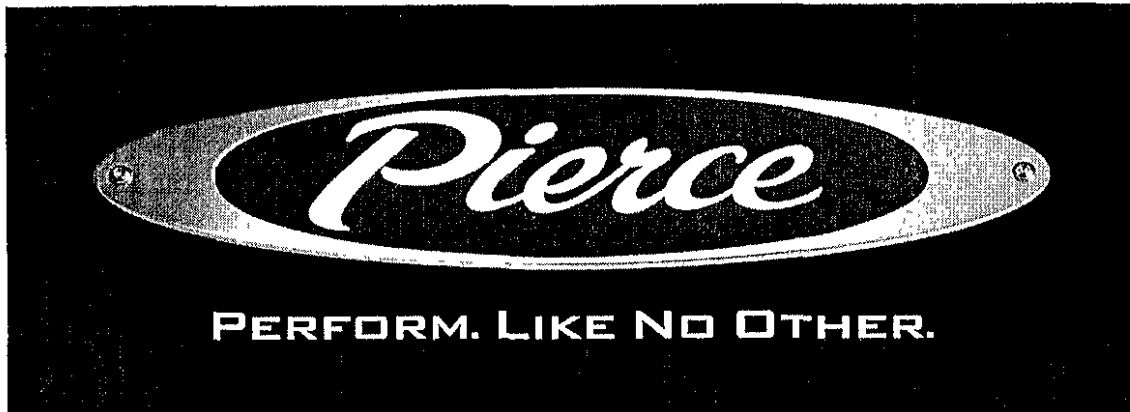
Attachments:

Northern California Agency List, Short Wheelbase Apparatus
Manufacturer Letter/Technical Report on Apparatus
Presentation, Short Wheelbase Ladder Truck For Midtown Deployment
Manufacturer Metal Surcharge Bulletin, Effective June 1, 2004

CC: File

CUSTOMER LIST

[illegible]



May 10, 2004

Milpitas Fire Department
777 S. Main Street
Milpitas, California 95035

Dear City Council Members,

One of the vehicles that the Milpitas Fire Department has inquired about is a "maneuverable aerial". The department is looking for an extremely short and highly maneuverable 75' aerial device. This truck must have a 1250 GPM midship mounted pump and as much compartment space as possible. Below is a picture of a similar truck that has been proposed to the Milpitas Fire Department. Please understand that the truck shown in this picture is not the exact truck that we are proposing, but it is a true representation of what the truck will look like when it is completed.



The truck shown in this picture is a 75' Heavy Duty Ladder with a 1250 GPM Waterous midship mounted pump. This aerial device is mounted on a Pierce Enforcer chassis that can seat up to eight (8) firefighters inside the cab. This chassis can have a Cummins 400 hp model ISL motor. The Cummins ISL 400 hp motor would be the exact same power plant that is currently in the newest Pierce Enforcer pumper that was delivered to the City of Milpitas in October of 2003.

I would like to do a breakdown of the proposed Pierce 75' Heavy Duty Ladder vs. your current Pierce Enforcer pumper that was delivered in October of 2003:

- The wheelbase on your current Enforcer pumper is 199.50". The wheelbase on the proposed Pierce 75' Heavy Duty Ladder will be 206.50". ***This is a difference of 7.00".***
- The overall length on your current Pierce Enforcer pumper is 375.50". The overall length on the proposed Pierce 75' Heavy Duty Ladder will be 437.00". ***This is a difference of 61.50" or 5'.***
- The overall height on your current Pierce Enforcer pumper is 124.00". The overall height on the proposed Pierce 75' Heavy Duty Ladder will be 132.00". ***This is a difference of 8.00".***

You can see that the physical differences between the proposed Pierce 75' Heavy Duty Ladder and your current Pierce Enforcer pumper are minimal. These differences are not significant in comparing two vastly different applications.

This truck has the TAK-4 Independent Front Suspension which allows for greater turning radius to the left and right and it has a vertical wheel travel of 10.00". The TAK-4 Independent Suspension has superior breaking compared to any other front axle in the industry. The main reason behind this is because the TAK-4 Independent Front Suspension has 17.00" brakes vs. the standard 15.00" brakes seen on other systems.

TAK-4™

Features & Benefits

October 16, 2002

Kevin Hancgraaf

This product overview has been put together in an effort to better inform each and every one of our customers on the particular features and benefits of the TAK-4™ IFS (independent front suspension).

History:

TAK-4 was engineered and developed by Oshkosh Truck® (OTC) for the military and aircraft rescue vehicles. With a successful implementation into the military MTVR (Medium Tactical Vehicle Replacement) program it was decided that this same system could be used on Pierce custom fire chassis. In late 2000 Pierce started the TAK-4 project for implementation on the Dash® and Lance® chassis. By March of 2001, TAK-4 was ready for sale and we started selling the best independent front suspension to hit the fire industry.

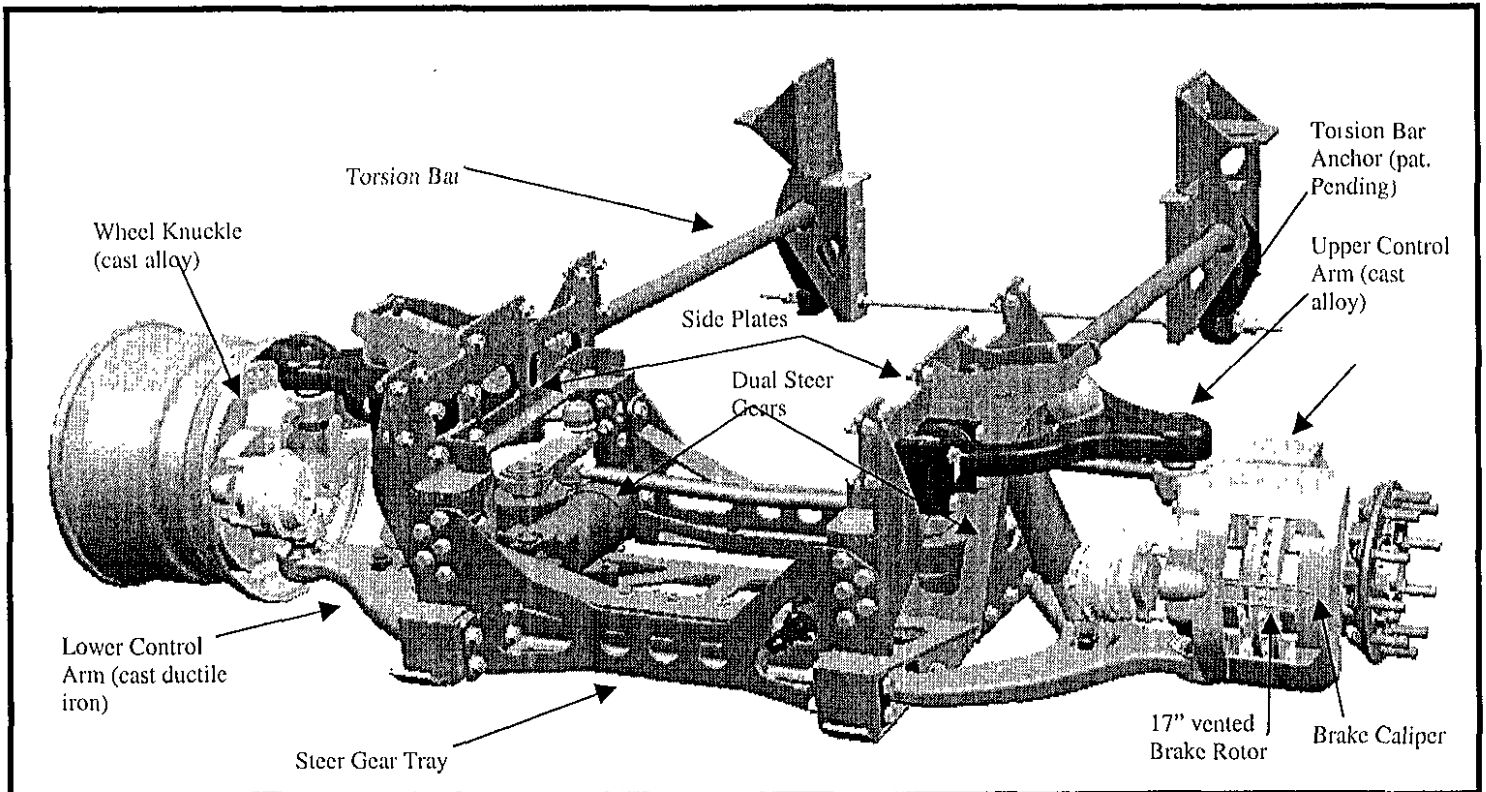
Build site/assembly:

Pierce has set aside an entire area for the assembly of TAK-4. Purchased, fabricated and cast parts all make up the TAK-4 assembly. Pierce makes all fabricated parts, and all other parts are purchased by Pierce. Assembly of the TAK-4 system is performed in a 6,000 square foot area at our head quarters in Appleton Wisconsin by Pierce employees. Our technicians use state of the art assembly equipment to ensure that quality and precision are the end results for every unit built. There are also routine calibration measures in place to make sure that our tools are always calibrated to the proper specifications.

Components:

The components of the TAK-4 system are complex yet simple. Slight modifications to our cab and chassis had to be made, however; the end result was a sleek and precise setup which pushed the Pierce chassis ahead of all other fire chassis'. As seen in the drawing below, there are a considerable number of components (220) that make up TAK-4. This illustration shows some of the major components that make up the TAK-4 assembly.

TAK-4 Component Diagram

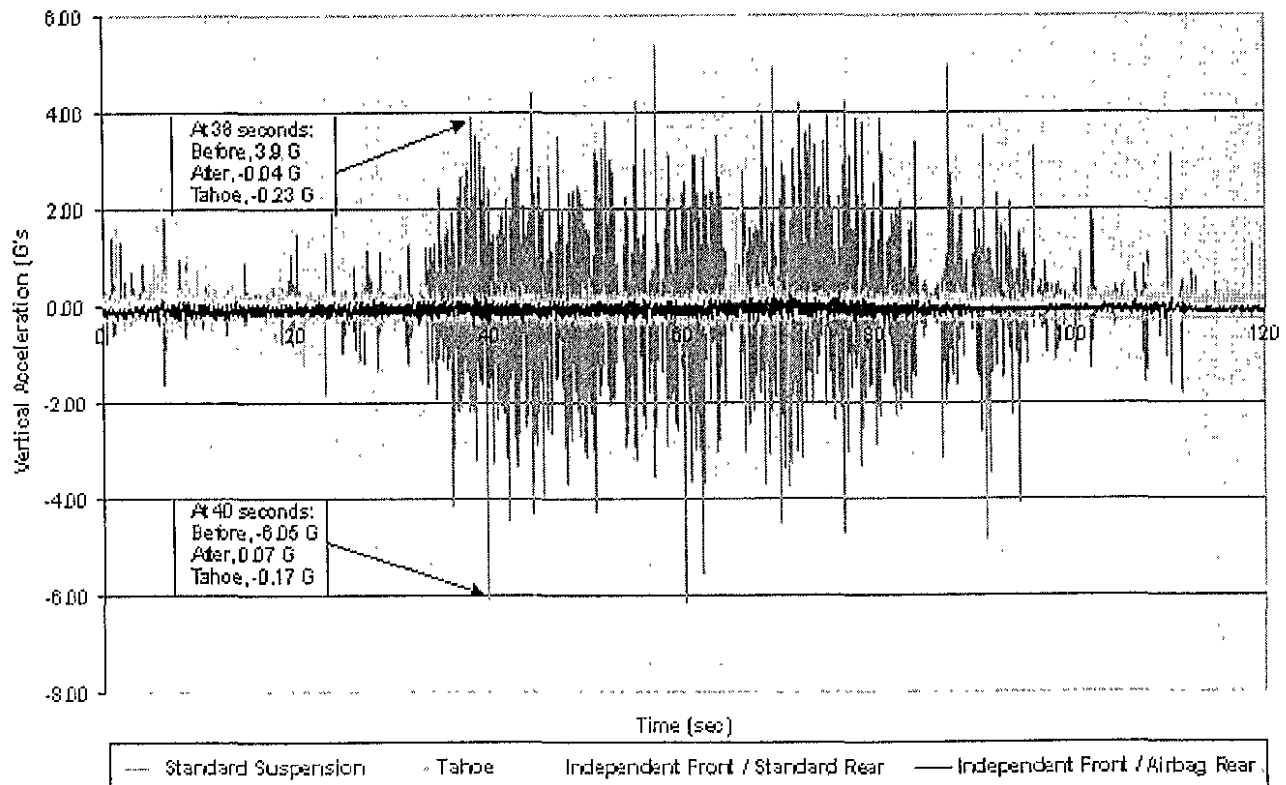


**Major components list of the TAK-4 system,
along with the supplier class, type of part & design group.**

Component	Make or buy	Fab, cast, machine	Design
<i>Torsion bar</i>	Buy	Fab	OTC
<i>Torsion bar anchor</i>	Make	Machine	OTC
<i>Wheel end</i>	Buy	Machine	Supplier
<i>Knuckle</i>	Buy	Cast	OTC
<i>Control arms</i>	Buy	Cast	OTC
<i>Steer gears</i>	Buy	N/A	Supplier
<i>Side plates</i>	Make	Fab	OTC
<i>Cross member</i>	Make	Fab	OTC
<i>Brake rotor</i>	Buy	Machine	Supplier
Fasteners	Buy	N/A	Supplier
Shock absorber	Buy	N/A	Supplier

TAK-4 is a mechanical over hydraulic system with 2 steering gears that provide power to the steering linkage. As you drive a truck with TAK-4 you will notice that it handles more like a sports car than a fire truck. A tight steering system, torsion bar independent suspension & high performance braking all add up to provide a sports car feel. The components designed into this system allow you to maintain the feel of the road, give you a superb ride quality, steer-a-bility and most of all provide you with the confidence that you are in control of the vehicle and the road.

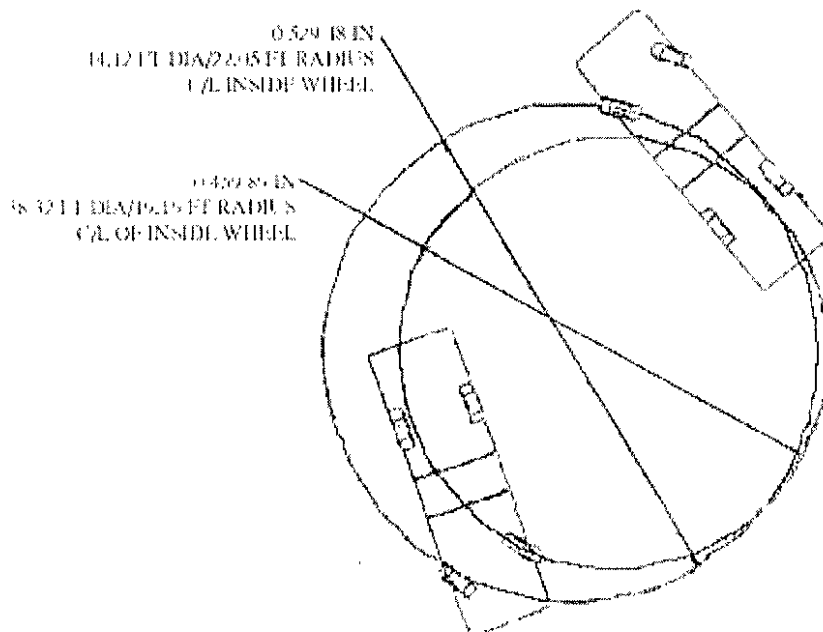
Ride Quality Comparison (American Drive, Appleton WI)



Per the above graph: It is important to note that the same test was performed on a 1996 Chevy Tahoe (4 door), the green line represents the ride quality performance. Notice how close the performance of the TAK-4 (orange line) is to the Tahoe. They are very similar in ride quality.

2. Cramp angle: Cramp angle is how sharp you can turn your front wheels in order to make the tightest turn possible and greatest maneuverability. The greater the cramp angle number is, the sharper you can turn. TAK-4 provides you with the highest cramp angle in the fire industry, thus you can safely and effectively maneuver into strategic locations in your attempt to get to the fire. The maximum cramp angle achievable on TAK-4 is 45°, minimum is 40°. The 45° cramp is standard on 18K-22,800 ratings and then it reduces to 40° on the 24,000 FAWR (front axle weight rating). It does not matter if the wheels are aluminum or steel in achieving the cramp angles. Cramp angle is a significant benefit in steering capability to get you in and out of tight areas. The higher the cramp angle the sharper your truck will turn. Pierce units with TAK-4 have better cramp angles than anyone in the business, combine this with the added FAWR of the TAK-4 and you are now equipped with the best possible front suspension to get you to the scene. **(see document 1A)**

3. Stopping distance: A truck outfitted with TAK-4 stops better than any straight axle unit in the industry. The TAK-4 is equipped with 17" vented brake rotors, coupled with higher torque values on the brakes. Pound for pound, TAK-4 trucks will stop in 23% less distance when compared to a truck built with a straight axle and 15" rotors. Brake testing done with same weight units, (see picture below) with and without TAK-4, prove that the TAK-4 unit stops 60 feet shorter traveling at 60 mph **(that's huge)**. So, if you consider the above information and put it to the real world test, using the TAK-4 system will help you stop quicker, stay in control and maneuver your vehicle to a safe and controlled stop. This in turn will reduce the chance for accidents and help



BLUE - 38 DEGREES OF CRAMP
RED - 45 DEGREES OF CRAMP

SHOWN WITH 167" W.B. and 66" C/L FRONT AXLE TO FRONT OF CAB

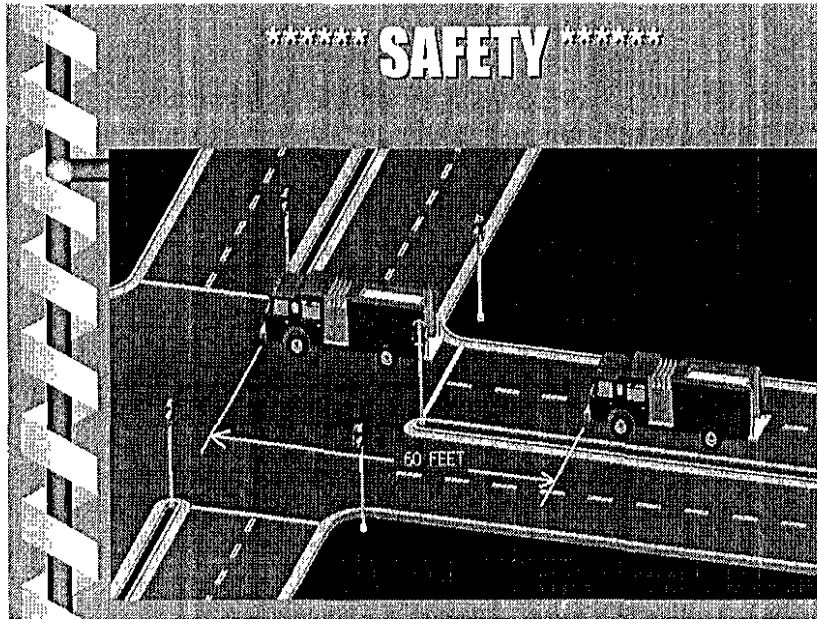
you get to the fire scene safer and quicker. The importance of this improved braking is considered to be so important that Pierce has had the brake testing certified by a 3rd party testing agency. (see documents 2A & 2B)

Above and beyond our own certified in-house testing and 3rd party certification, we also subjected the same TAK-4 system to a braking durability test at the mountain brake testing at Jennertown, PA. The test consisted of long downhill descents and brake snubs to create high temperatures. This test shows that the TAK-4 braking is a success and was approved by Bendix/Knorr. (See document 3A & 3B)

This picture depicts the stopping distance of 2 like units (60-0 mph), except for the axles. The unit safely stopped 60' behind the other unit is equipped with TAK-4 independent suspension.

Which unit would you rather be driving???

Durability



Testing & durability: The original independent front suspension system was designed and built by Oshkosh Truck® for the Military and was put through 80,000 actual durability test miles. This testing was performed in extreme off road conditions as the Military units are typically driven. Plus these systems have been proven through years of service on airport rescue vehicles and fire fighting vehicles throughout airports around the world.

When TAK-4 was introduced into the Pierce chassis lines, testing was not spared. A TAK-4 system was mounted on a unit and sent to TRC (Transportation Research Center, a 3rd party test facility) in Ohio for durability testing. TRC is one of the largest independent testing facilities in the world and tests the structural integrity of heavy truck components. The chatter bumps, staggered bumps, chuckholes, high crown intersection and brake skid pad that comprise this durability course are used to severely pound a trucks suspension, steering and braking system as well as accelerates the real world duty cycle. All of this testing was done to the TAK-4 system with a 24,000 lb. load on the front axle and then subjected to 17,700 actual test miles. That's almost 124,000 real world miles as TRC's testing data shows that each test mile represents 7 real world miles. This testing proves out the design and workmanship over the actual test miles driven. Pierce's commitment to testing proves that it is **"Better to test before vs. making the customer be the proving ground"**. Our design and workmanship hold true to form and functionality.

Maintenance: The end user and mechanic were foremost in our minds as we designed and developed the TAK-4 system. Pierce wanted to make TAK-4 as practical and efficient as possible when it came to maintaining this system. As the chart below shows, there are quite a few new and improved concepts built into TAK-4 that make it much easier to maintain than straight axle trucks.

TAK-4 Maintenance Benefits

No U-bolts 17" brake rotors	Caster angle built into design (no adjusting)	Lube for life ball joints	Grease zerks on control arm pivots
Dual steer gears	Adjust leans in 15 minutes (anchor lock system)	Cast metal control arms and knuckles	Vogel lube system (available as option)

Brake life/maintenance: Actual field results. This is the icing on the cake for the maintenance and budgeting personnel. "Brakes on the TAK-4 will reduce your overall time spent changing brakes and reduce the amount of dollars you spend on parts and labor to replace worn components. We know for a fact, that the brake life on a TAK-4 pumper unit lasts substantially longer than our straight axles. Why? Because of increased brake pad and rotor size (17"). Based on real life information we have received from our big city accounts, TAK-4 brakes last longer. How much longer you may ask? We currently have a set of TAK-4 pads/rotors with 19,900 miles on them and this unit has not yet had the brakes or rotors changed. Inspections of this pumper unit confirm that there is 9/16" of brake pad left and the rotor was not cracked or heat checked. With this much brake pad remaining, the expected miles before pads and rotors need to be changed will be at mile mark 56,270. This means that around 112,000 miles, you will finally be ready for your second brake change. Note that this real life example is based on a big city pumper where there are a lot of miles put on in a short period of time and heavy braking is the norm.

TAK-4 Brakes means savings: We can all do the math and find out that there are savings to be had using the TAK-4 system. Note the chart below identifies available savings using TAK-4. The costs below will increase roughly 3% per year due to inflation which would make the "Brake cost life/unit" increase that much more and ultimately make TAK-4 highly justifiable. The chart below shows the cost savings available for TAK-4 brakes that are available over 112,000 vehicle miles. This alone is the number one reason why you can afford TAK-4 on your vehicle.

Brake pad cost analysis:

	Pad/Rotor/labor \$	Miles/chng	Life mile/unit	Changes in 100k miles	Brake cost life/unit
15" rotor std. axle	\$1,260	9000	112,000	12	\$15,120
17" rotor TAK-4	\$1,600	56,270	112,000	2	\$3,200

The above chart reflects that you will save approximately \$11,920 within 112,000 miles

TAK-4 hidden savings: In addition to the actual cost of the brake job, there are other hidden costs that TAK-4 will help reduce for your fire department.

1. Fire fighters can perform regular duties vs. down time
2. Fewer times to transfer equipment from truck to truck
3. Less downtime of fire apparatus
4. Less wear/tear on other vehicle components due to ride quality

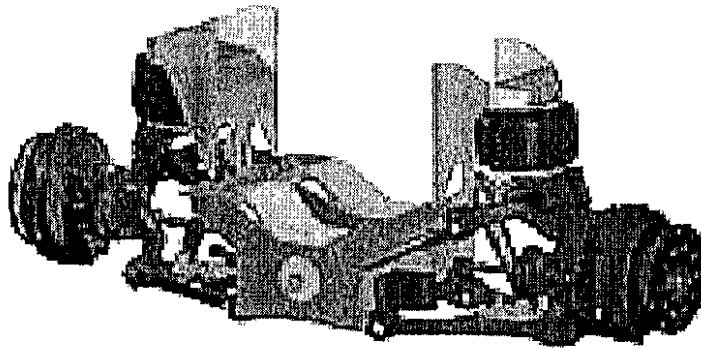
It is a fact that your truck will be out of service 4 hours minimum to have the brakes serviced. Now your fire fighters are not doing what they are paid to do. Each department knows the hourly rate for down time, and the less hours your rig is out of service the more dollars you save. TAK-4 will reduce the amount of time your truck is out of service and keep your personnel performing their normal duties. This means for every one time a TAK-4 truck has the brakes serviced a straight axle truck will have it serviced 6 times. That's a whole lot of down time for your department.

Future development: TAK-4 is available on the Dash®, Lance®, Enforcer™ and Quantum® chassis'. These chassis' will now accommodate TAK-4 as well as all of the other features typically offered. TAK-4 will continue to be looked at in future product offerings.

Sales: TAK-4 was first introduced in March of 2001 as an option on two (2) of our chassis'. Today it is the standard feature on four (4) of our six (6) chassis offerings and has catapulted sales to over 370 systems sold. This equates to roughly 50% of our custom chassis sold with TAK-4 independent front suspension.

Competitors: There is currently only one other front independent suspension available in the fire industry today (Dana/Ridewell) that has a weight rating that will compete in the fire industry. It has not yet been purchased or installed by any of our competitors, however; that does not mean it will not show up. This system (**see picture below**) is uniquely different than TAK-4 and should be studied so you can compare the TAK-4 system to it. The following items should be noted on the Dana/Ridewell suspension.

1. **Air bag susp. used vs. torsion bar** (potential leaks)
2. **Non vented brake rotor** (heats up and reduced brake-ability)
3. **Dual source supplier with 3rd party installer** (Pierce is single source)
4. **18,000 lb maximum capacity** (TAK-4 max is 24,000)
5. **Never installed on a fire chassis** (371 TAK-4 systems sold)
6. **No customer base to support durability** (Request list of 350 from Pierce)
7. **Availability of braking or durability certification** (Pierce cert's available)





Kevin Hanegraaf
Pierce Manufacturing, Inc.
P.O. Box 2017
Appleton, WI 54913-2017

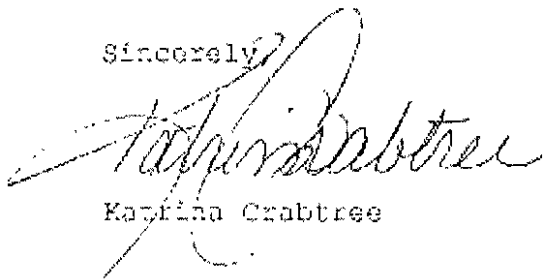
To Whom It May Concern:

Midwest Aerial Inspection, Incorporated as an independent third party inspection service, certifies that the documented results were observed and recorded for the steering cramp angle on the following Pierce chassis, Lance, Dash and Enforcer. The steering cramp angle observed was with the new TAK-4 front suspension.

All the procedures, used to measure the cramp angle, as well as actual measurements are on file with Pierce Manufacturing and Midwest Aerial Inspection, Inc.

<u>Actual GVW</u> (front axle)	<u>Wheel Type</u>	<u>Tire Make</u>	<u>Cramp Angle Achieved</u>	
			Left	Right
22,800	Steel	Michelin	45 degree	45 degree
24,000	Steel	Michelin	40 degree	40 degree

Sincerely,



Katrina Crabtree

As you will see in the attached turning radius report we are able to dictate what the turning radius of the proposed Pierce 75' Heavy Duty Ladder will be. In this report we break down the wall to wall, curb to curb and inside turning radius dimensions based on a wheelbase of 206.50".

- Wall to Wall: 35 feet 2 inches
- Curb to Curb: 30 feet 8 inches
- Inside Turn: 16 feet 2 inches

In addition, the compartment cubic footage is able to be determined prior to commencement of construction. The compartment cubic footage on the proposed Pierce 75' Heavy Duty Ladder will be 97.07 c.f. This will be ample enough space for the department to store their equipment as well as "grow" into the truck for future expansions and or requirements.

WARRANTY OFFERINGS

One question that every customer has is what kind of warranty coverage we provide on our products. The following is a warranty breakdown on this product, a copy of each warranty will be included at time of proposal submission.

- Bumper to Bumper: Our standard warranty is a one (1) year bumper to bumper warranty.
- Aerial Structural Warranty: This is a 20 year structural warranty that covers the ladder sections, torque box, turntable and stabilizers.
- Cab and Body Structural Warranty: This is a 10 year structural warranty that covers the cab and body structural components.
- Paint Warranty: This is a 10 year pro-rated warranty that covers the paint.
- Gold Star Lettering: This covers all gold leaf letters, striping, etc. for three (3) years.
- Frame Rail Warranty: The frame rails are covered for the life of the vehicle.
- Water Tank Warranty: The water tank is covered for the life of the vehicle by UPF.
- Waterous Pump Warranty: The Waterous pump is covered for five (5) years.
- Meritor Rear Axle Warranty: This is covered for three (3) years.

- Allison Transmission Warranty: This warranty is five (5) years and it covers 100% parts and labor.
- Cummins ISL Motor Warranty: This warranty is five (5) years and it covers 100% parts and labor.

Finally, it is imperative that everyone is aware of the proposal that Pierce Manufacturing, Inc. and Golden State Fire Apparatus, Inc. have offered to the City of Milpitas. Our standard build time on an aerial ladder is 7.5 – 8.5 months. However, Pierce has agreed to build this truck in 6 – 6.5 months as a favor to the City of Milpitas. We understand that this is an emergency purchase for the City and we are prepared to assist in any manner that we can. In addition, Pierce Manufacturing, Inc. and Golden State Fire Apparatus, Inc. has provided very attractive pricing for this purchase. We believe in earning a customer's business in the way that we conduct business, quality products, quality service and honesty in all of our business dealings. We remain.

Most Cordially Yours,
Golden State Fire Apparatus, Inc.

Bill Wright
President

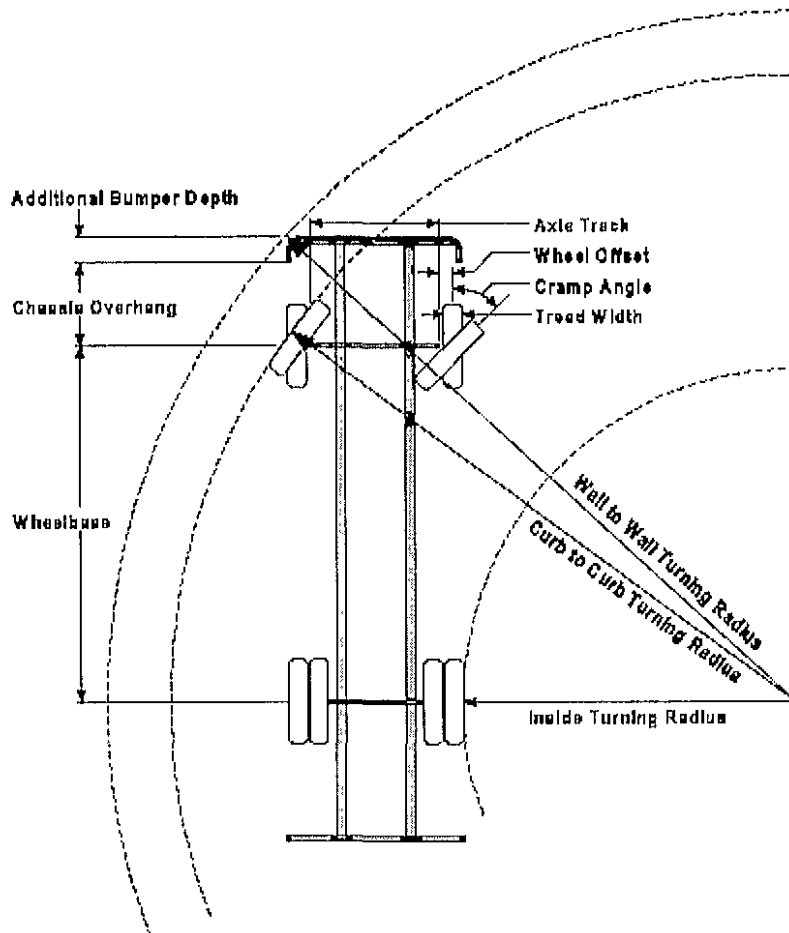


Turning Performance Analysis

5/7/2004

Bid Number: Milpitas Fire Department
Department: 1041

Chassis: Enforcer Chassis, Aerials, 31K Single Axle
Body: Aerial, HD Ladder 75', Pumper, Alum Body



Parameters:

Inside Cramp Angle:	45°
Axle Track:	82.92 in.
Wheel Offset:	4.68 in.
Tread Width:	15.60 in.
Chassis Overhang:	65.99 in.
Additional Bumper Depth:	22.00 in.
Front Overhang:	87.99 in.
Wheelbase:	206.50 in.

Calculated Turning Radii:

Inside Turn:	16 ft. 2 in.
Curb to Curb:	30 ft. 8 in.
Wall to Wall:	35 ft. 2 in.

Comments:

Milpitas Fire Department

Components	PRIDE #	Description
Bumpers	0012246	Bumper, 22" extended - all chassis'
Tires, Front	0001611	Tires, Michelin, 385/65R22.50 18 ply XZY tread
Aerial Devices	0026902	Aerial, 75' Heavy Duty Ladder
Wheels, Front	0019611	Wheels, Frt, Alum, Alcoa, 22.50" x 12.25" (425/ & 385/)
Axle, Front, Custom	0030262	Axle, Front, Oshkosh TAK-4, Non Drive, 19,500 lb, DLX/Enf/Qtm/AXT

Notes:

Actual Inside Cramp Angle may be less due to highly specialized options.

Curb to Curb turning radius calculated for a 9.00 inch curb.

Reduce turning radius by 33% if vehicle is equipped with all-wheel steer.



Turning Performance Analysis

5/7/2004

Bid Number: Milpitas Fire Department
Department: 1041

Chassis: Enforcer Chassis, Aerials, 31K Single Axle
Body: Aerial, IID Ladder 75', Pumper, Alum Body

Definitions:

Inside Cramp Angle	Maximum turning angle of the front inside tire.
Axle Track	King-pin to king-pin distance of the front axle.
Wheel Offset	Offset from the center-line of the wheel to the king-pin.
Tread Width	Width of the tire tread.
Chassis Overhang bumper depth.	Distance from the center-line of the front axle to the front edge of the cab. This does not include the bumper depth.
Additional Bumper Depth	Depth that the bumper assembly adds to the front overhang.
Wheelbase	Distance between the center lines of the vehicle's front and rear axles.
Inside Turning Radius	Radius of the smallest circle around which the vehicle can turn.
Curb to Curb Turning Radius	Radius of the smallest circle inside of which the vehicle's tires can turn. This measurement assumes a curb height of 9 inches.
Wall to Wall Turning Radius	Radius of the smallest circle inside of which the entire vehicle can turn. This measurement takes into account any front overhang due to the chassis, bumper extensions and/or aerial devices.



May 10, 2004

Milpitas Fire Department
777 South Main Street
Milpitas, California 95035

Dear City Council Members,

In working with the Milpitas Fire Department it has come to our attention that the planned developmental growth in the area near Fire Station #1 will present some unique challenges for maneuverability in emergency responses, this growth will require specialized equipment. In the following pages we are going to demonstrate how we believe Pierce products are the most advantageous for the Milpitas Fire Department.

We currently have a working relationship with the Milpitas Fire Department we delivered a Pierce Enforcer Pumper in October of 2003 and it is being operated at Station #1. This pumper was awarded to Pierce Manufacturing, Inc. on February 5th, 2002 from a competitive bid; quote #879 in the amount of \$367,727.56 which included all sales taxes. Attached below is a picture of the Pierce Enforcer Pumper as delivered in October of 2003.



In addition to a Pierce 75' Heavy Duty Ladder; a shorter version of the above pictured pumper has been discussed as well. The above pictured pumper has a wheelbase of 199.50". This newest shorter version pumper will have an approximate wheelbase of 169.50". The exact wheelbase will depend on how the crosslays and other components mounted on top of the midship pump are configured. This difference will make the vehicle more "maneuverable" in tighter areas.

One may ask how we shaved so much from the wheelbase dimension of the existing Pierce Enforcer pumper? A couple of ways that we have done this is to delete the engineer's compartment which is directly behind the cab and then relocate the crosslays. The body on your current pumper is a medium body. We have now changed to a short body and replaced the hydraulic ladder rack with putting the ladders inside the body which will also reduce the overall height of the vehicle. These are the major factors in reducing the wheelbase, overall length, and overall height. Specific and final details of the configuration will be determined by the Pierce engineering department.

Included with this presentation is a turning radius report that will show just how tightly this proposed short wheelbase pumper will turn. However, we will supply the dimensions. They are as follows:

- Wall to Wall: 30 feet 8 inches.
- Curb to Curb: 26 feet 8 inches.
- Inside Turn: 13 feet 8 inches.

In addition, the compartment cubic footage will be less than what is on the current Pierce Enforcer pumper. The amount of compartment cubic footage in the proposed short body pumper will be 24.58. The priority has been put on maneuverability not compartment space.

Just like the Pierce 75' Heavy Duty Ladder; we have proposed this vehicle with the TAK-4 Independent Front Suspension. Since the introduction of the Independent front suspension in late 2001 Pierce has sold & delivered over 1,700 TAK-4 Independent Front Suspension systems. Our parent company Oshkosh Truck Corporation currently has over 9,000 TAK-4 Independent Front Suspension Systems in Iraq and Afghanistan. Oshkosh Truck Corporation is the developer of the TAK-4 Independent Front Suspension system. Most of our competitors purchase their components and install them on a purchased chassis; therefore, one question we always ask is.....who stands behind the warranty?

The one advantage with Pierce Manufacturing, Inc. and Golden State Fire Apparatus, Inc. is that one telephone call is all that has to be made, we are a single source manufacturer. The most valuable advertisement we have is our customer's. The reason we say this is because if a customer is happy with the end product they may tell a couple of people, but if they are unhappy then everyone will hear about the problems. The latter is advertisement we cannot afford. We stand behind our products and customers 100%.

In addition, our service center which is located directly next door to our sales office is Burtons Fire Apparatus. We have an exclusive service and warranty agreement where they will only do warranty work for Pierce Manufacturing, Inc. and Golden State Fire Apparatus, Inc. Burtons Fire Apparatus has an in house inventory level in excess of \$650,000.00. We understand the importance of having equipment available to our customers so that they may keep their apparatus in service. We try our hardest to get parts and service to the appropriate person in a timely manner.

We have many customers who require a short wheelbase pumper for maneuverability. Most of these requests come from the Bay Area. For example, Marin County customers require us to build trucks as short as physically possible. Please understand that there is no problem in building a short truck, but we need take make sure that it is going to operate correctly. Therefore, we perform driveline reviews, axle weight capacities reviews, etc. The shortest wheelbase pumper that Pierce has ever built is 153.00". Typically, these are the kinds of custom pumpers that we deliver to Bay Area departments because of the requirements of maneuverability. The copy of our customer list is available upon requests and we will provide you with customer's names and contact numbers should you desire.

Golden State Fire Apparatus, Inc. has over 600 Pierce apparatus in our territory of central/northern California. Our best reference is our customers. We remain.

Most Cordially Yours,
Golden State Fire Apparatus, Inc.

Bill Wright
President

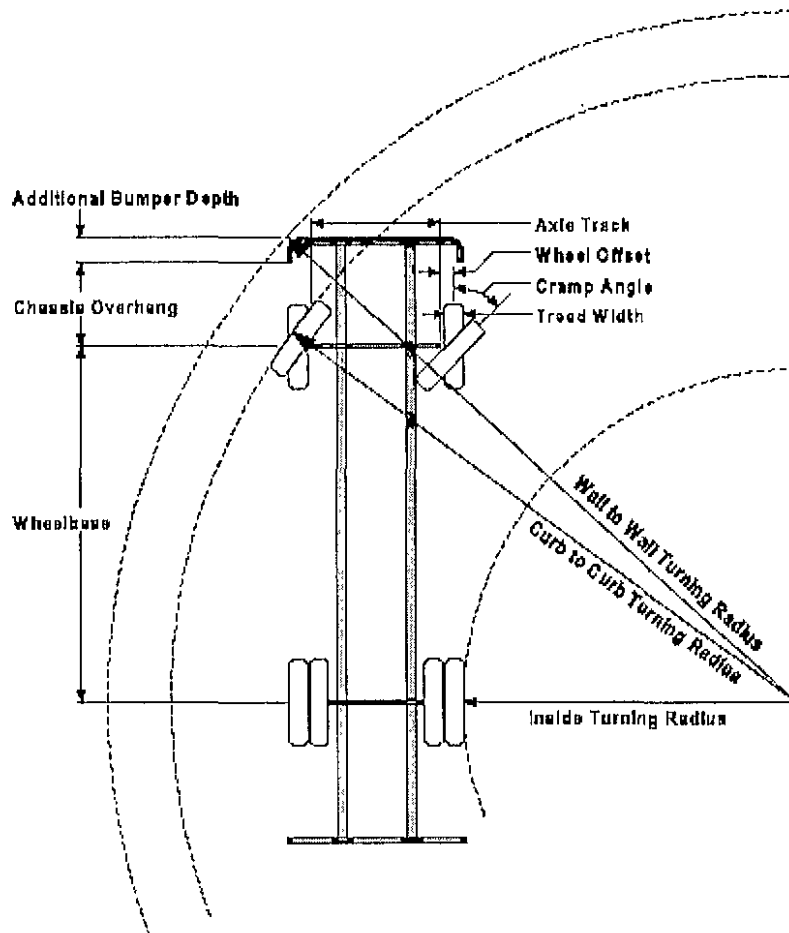


Turning Performance Analysis

5/7/2004

Bid Number: Milpitas Fire Department
Department: 1050

Chassis: Enforcer Chassis
Body: Pumper, Short, Galv, 2nd Gen



Parameters:

Inside Cramp Angle:	45°
Axle Track:	86.17 in.
Wheel Offset:	6.02 in.
Tread Width:	13.60 in.
Chassis Overhang:	65.99 in.
Additional Bumper Depth:	16.00 in.
Front Overhang:	81.99 in.
Wheelbase:	169.50 in.

Calculated Turning Radii:

Inside Turn:	13 ft. 1 in.
Curb to Curb:	26 ft. 8 in.
Wall to Wall:	30 ft. 8 in.

Comments:

Milpitas Fire Department

Components	PRIDE #	Description
Bumpers	0012244	Bumper, 16" extended - all chassis'
Tires, Front	0031622	Tires, Michelin, 315/80R22 50 20 ply XZY-2
Wheels, Front	0019575	Wheels, Fri, Alum, Alcoa, 22.50" x 9.00"
Axle, Front, Custom	0091742	Axle, Front, Oshkosh TAK-4, Non Drive, 18,000 lb, DLX/Enf/Qtm/AXT

Notes:

Actual Inside Cramp Angle may be less due to highly specialized options.

Curb to Curb turning radius calculated for a 9.00 inch curb.

Reduce turning radius by 33% if vehicle is equipped with all-wheel steer.



Turning Performance Analysis

5/7/2004

Bid Number: Milpitas Fire Department
Department: 1050

Chassis: Enforcer Chassis
Body: Pumper, Short, Galv, 2nd Gen

Definitions:

Inside Cramp Angle	Maximum turning angle of the front inside tire.
Axle Track	King-pin to king-pin distance of the front axle.
Wheel Offset	Offset from the center-line of the wheel to the king-pin.
Tread Width	Width of the tire tread.
Chassis Overhang	Distance from the center-line of the front axle to the front edge of the cab. This does not include the bumper depth.
Additional Bumper Depth	Depth that the bumper assembly adds to the front overhang.
Wheelbase	Distance between the center lines of the vehicle's front and rear axles.
Inside Turning Radius	Radius of the smallest circle around which the vehicle can turn.
Curb to Curb Turning Radius	Radius of the smallest circle inside of which the vehicle's tires can turn. This measurement assumes a curb height of 9 inches.
Wall to Wall Turning Radius	Radius of the smallest circle inside of which the entire vehicle can turn. This measurement takes into account any front overhang due to the chassis, bumper extensions and/or aerial devices.

Pierce 75' Heavy Duty Ladder



Pierce 75' Heavy Duty Ladder

- 1250 GPM pump
- Seating-4
- EMS Cabinet
- GVW – 50,500 lbs.
- Axle Front Tak
- Engine Cummins 400hp
- Water tank 300 gal.
- Back-up Camera
- Ladders 35 ft, 24ft, attic



Pierce 75' Heavy Duty Ladder



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Pierce 75' Heavy Duty Ladder

Hose –3 Cross lays 150 ft

- **200 ft**
- **200 ft**

• **Hose Bed – 500 ft 5”**

• **500 ft 2 1/2 “**

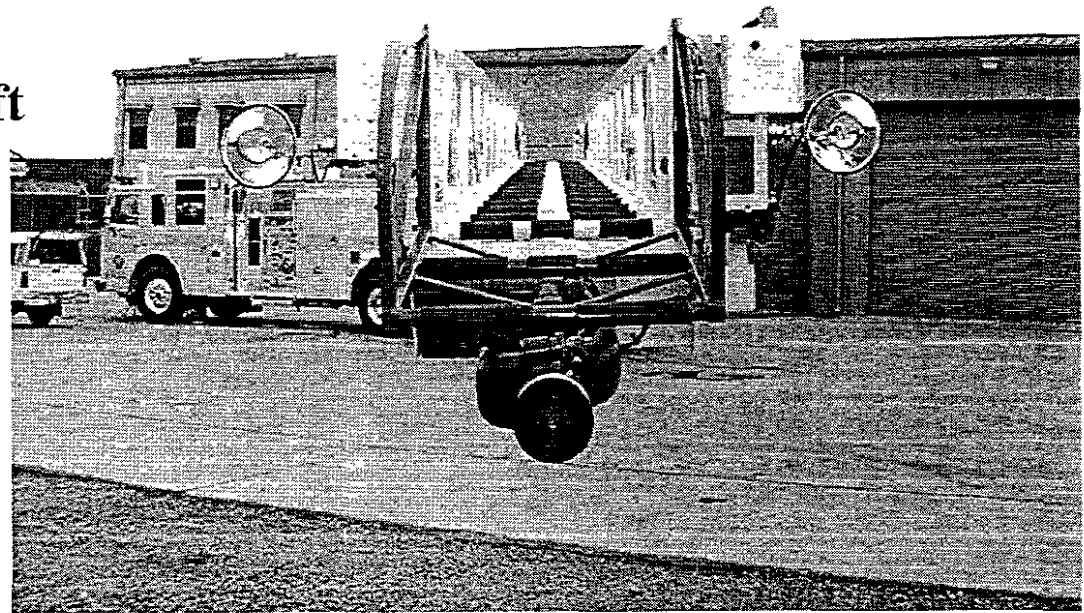
• **Front bumper – 1 3/4” 100 ft**

• **1 3/4 50”**

• **Hydraulic Hose Reel**

• **Hurst Rescue Tool**

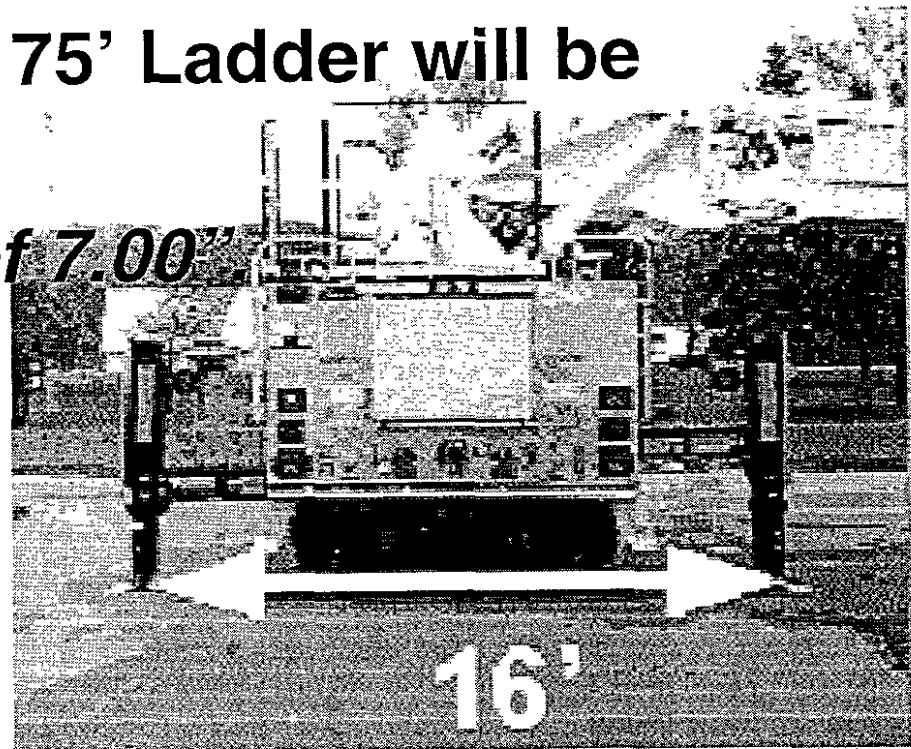
• **Tools 7 Equipment**



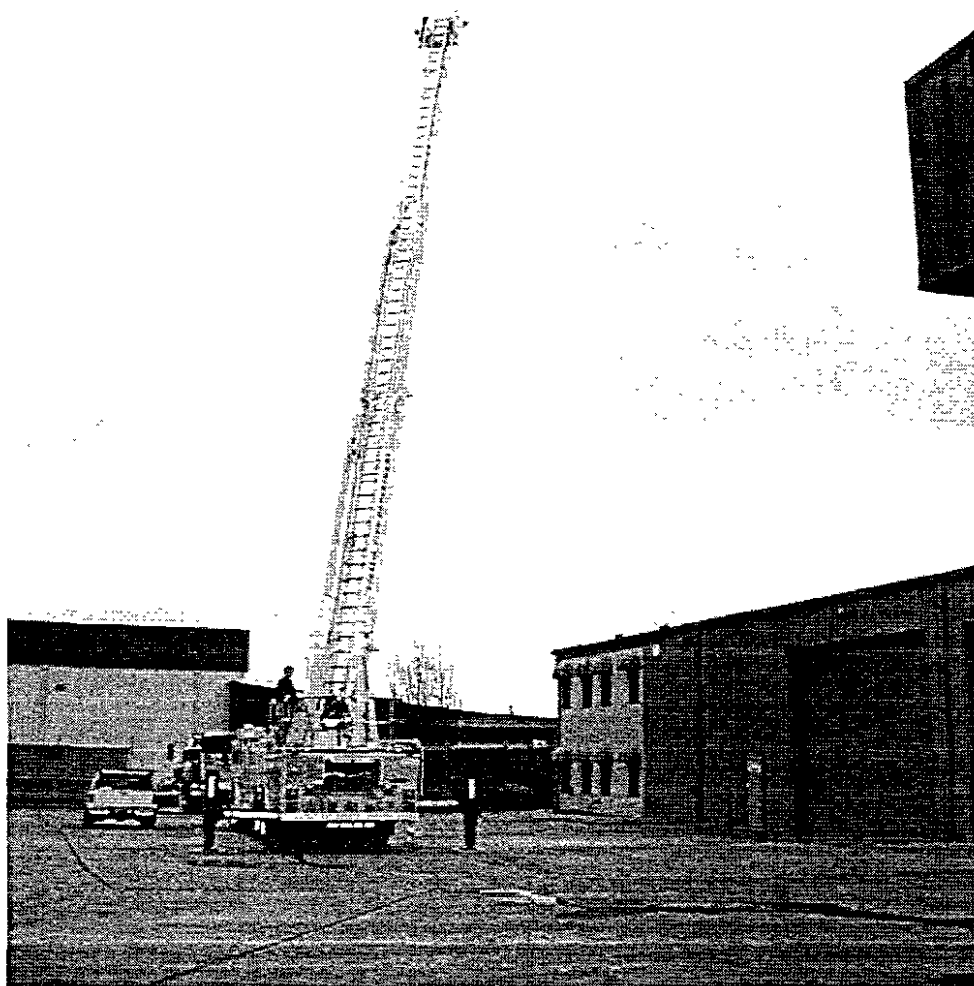
Pierce 75' Heavy Duty Ladder

Comparisons -WHEELBASE

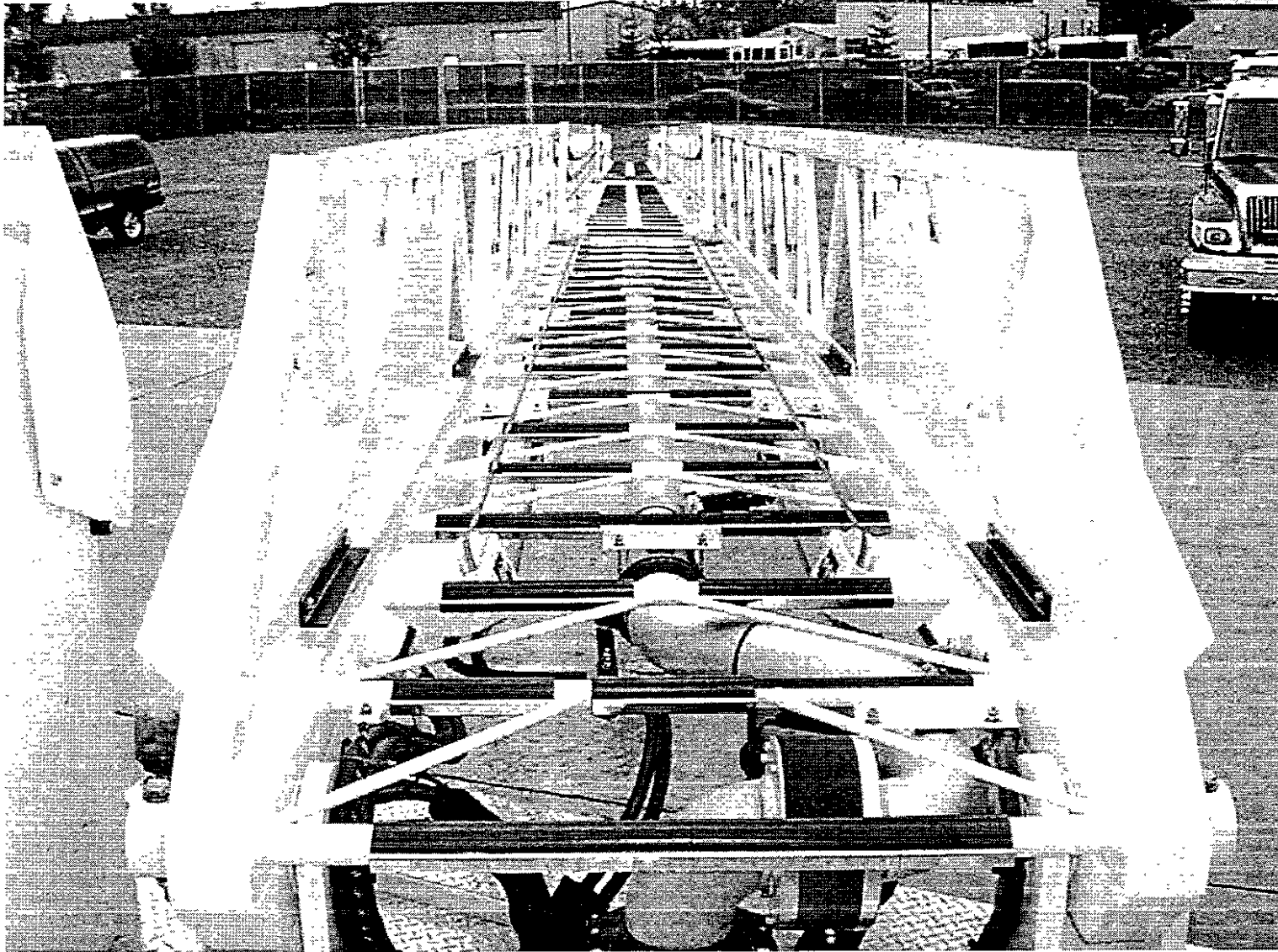
1. The wheelbase on your Enforcer Pumper is 199.50".
2. The wheelbase on the **75' Ladder** will be 206.50".
3. ***This is a difference of 7.00"***



Pierce 75' Heavy Duty Ladder



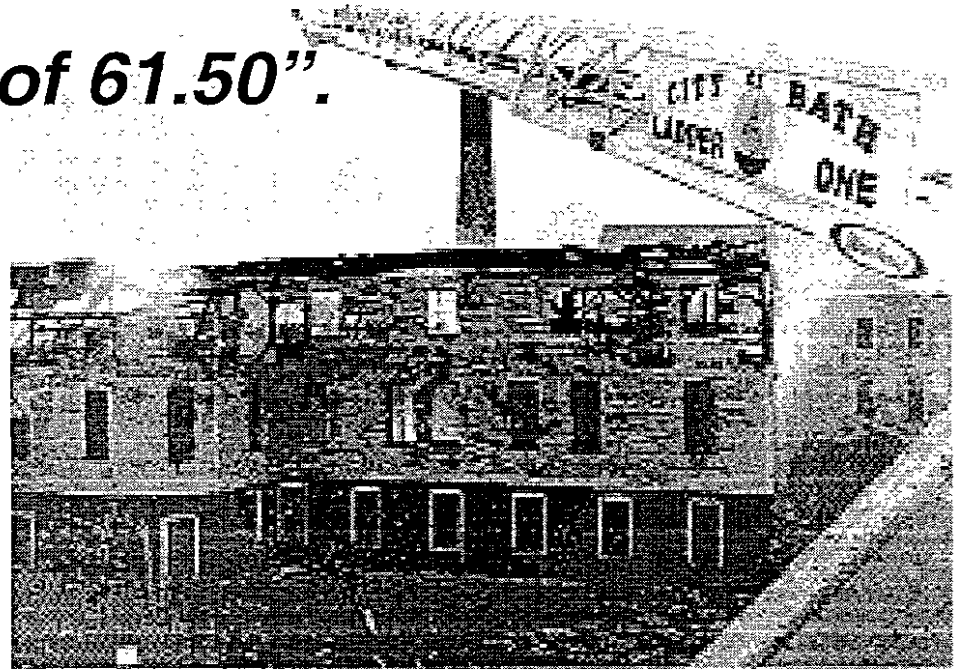
Pierce 75' Heavy Duty Ladder



Pierce 75' Heavy Duty Ladder

Comparisons - LENGTH

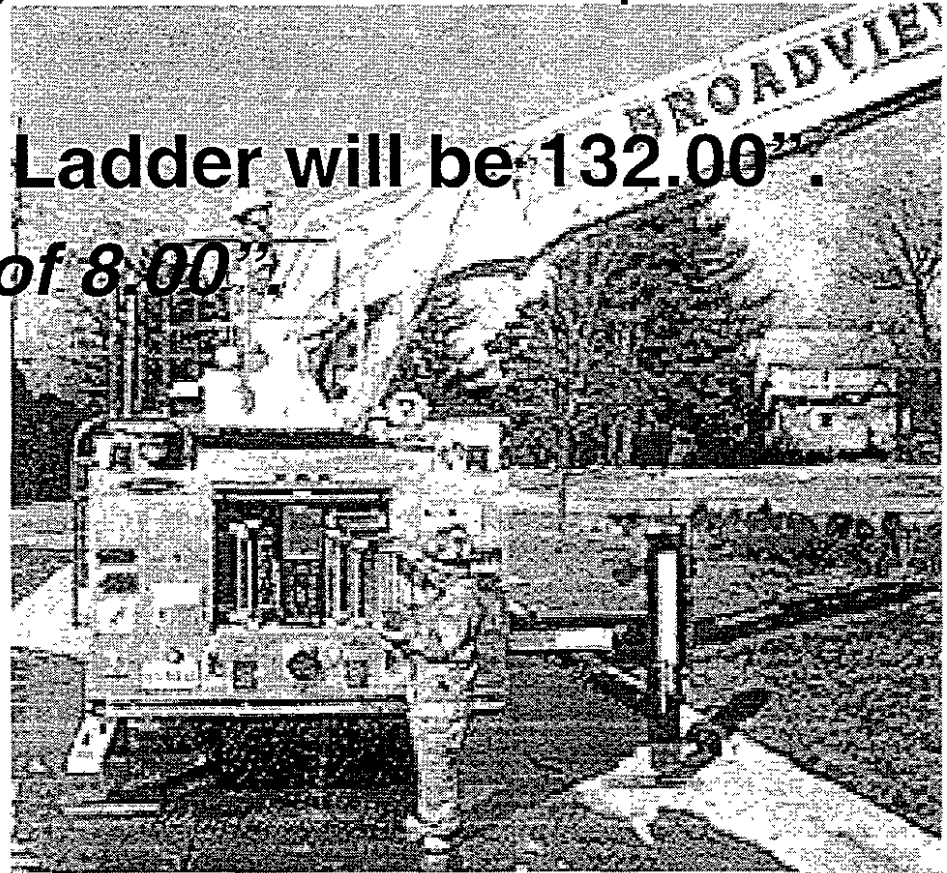
1. The overall length of your Enforcer Pumper is 375.50"
2. The length on the 75' Ladder will be 437.00".
3. ***This is a difference of 61.50".***



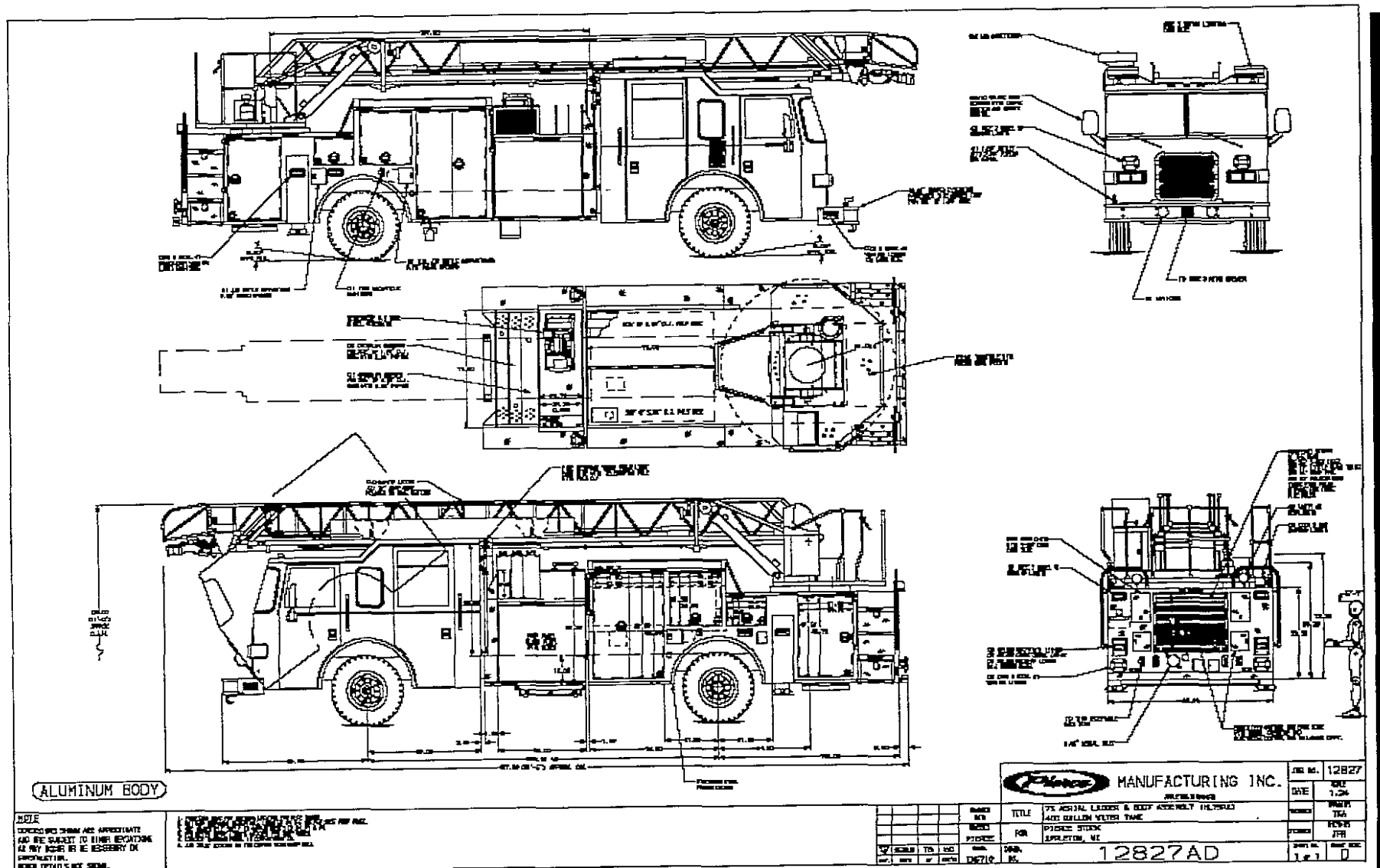
Pierce 75' Heavy Duty Ladder

Comparisons - HEIGHT

1. The overall height of your Enforcer Pumper is 124.00"
2. The height on the 75' Ladder will be 132.00".
3. ***This is a difference of 8.00"***



Pierce 75' Heavy Duty Ladder



Pierce 75' Heavy Duty Ladder

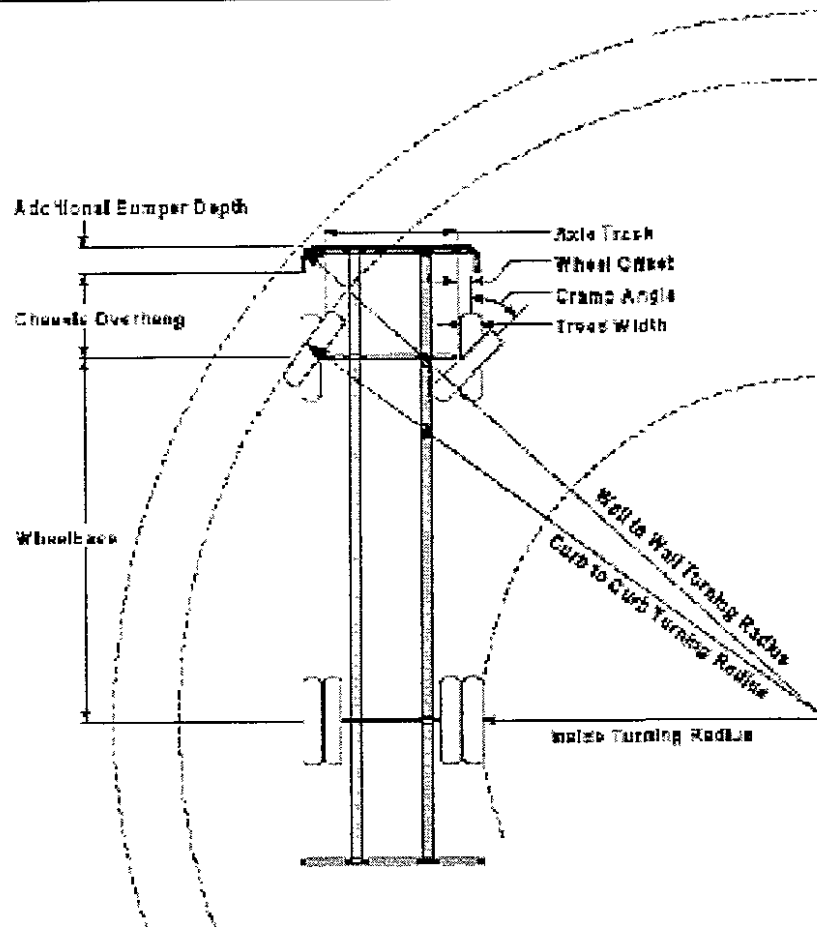


Turning Performance Analysis

1/26/2004

Bid Number: Milpitas Fire Department
Department: 1041

Chassis: Enforcer Chassis Aerials, 31K Single Axle
Body: Aerial, HD Ladder 75', Pumper, Alum Body



Parameters:

Inside Cramp Angle:	45°
Axle Track:	82.92 in.
Wheel Offset:	4.63 in.
Tread Width:	15.60 in.
Chassis Overhang:	65.99 in.
Additional Bumper Depth:	22.00 in.
Front Overhang:	87.99 in.
Wheelbase:	206.50 in.

Calculated Turning Radii:

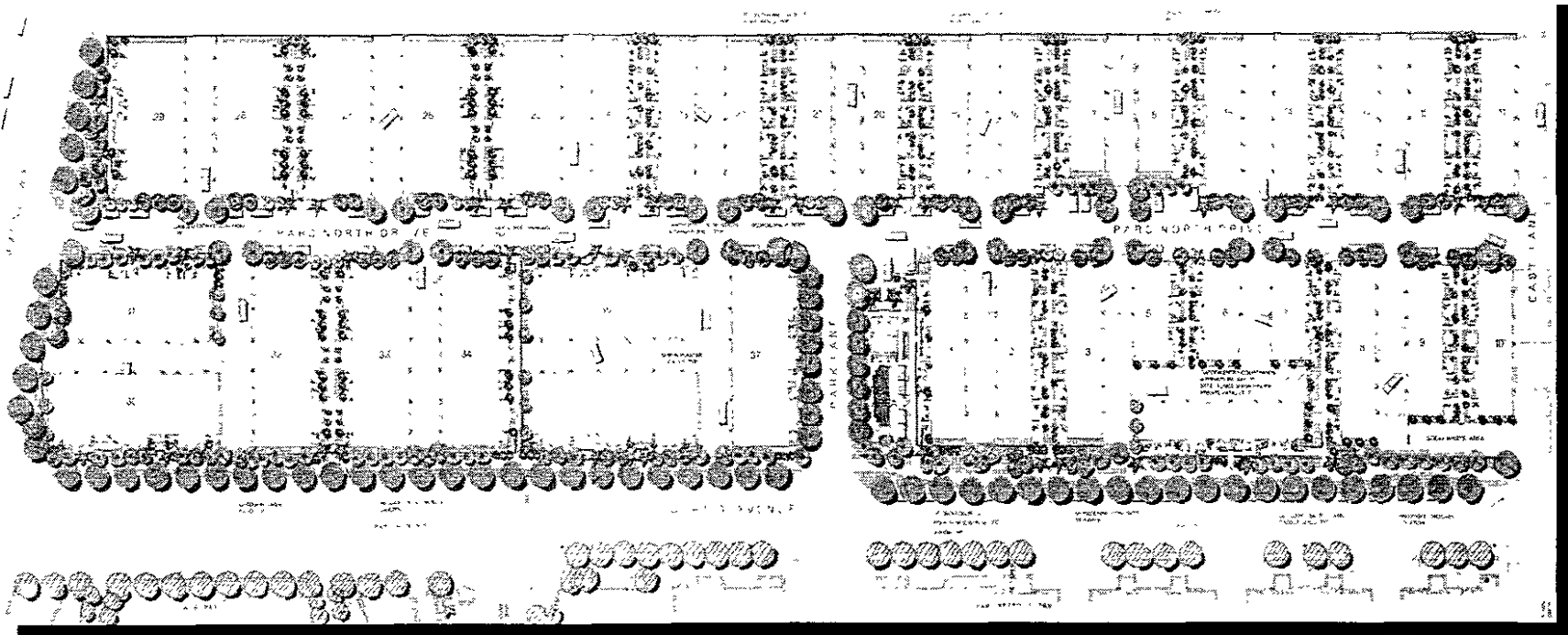
Inside Turn:	16 ft. 2 in.
Curb to Curb:	30 ft. 3 in.
Wall to Wall:	35 ft. 1 in.

Comments:

Milpitas Fire Department

Pierce 75' Heavy Duty Ladder

- Access Concerns
- Narrow easements
- Higher Density Residential Developments



Pierce 75' Heavy Duty Ladder

- Access Concerns
- Narrow easements
- Higher Density Residential Developments



Pierce 75' Heavy Duty Ladder

- Access Concerns
- Narrow easements
- Higher Density Residential Developments



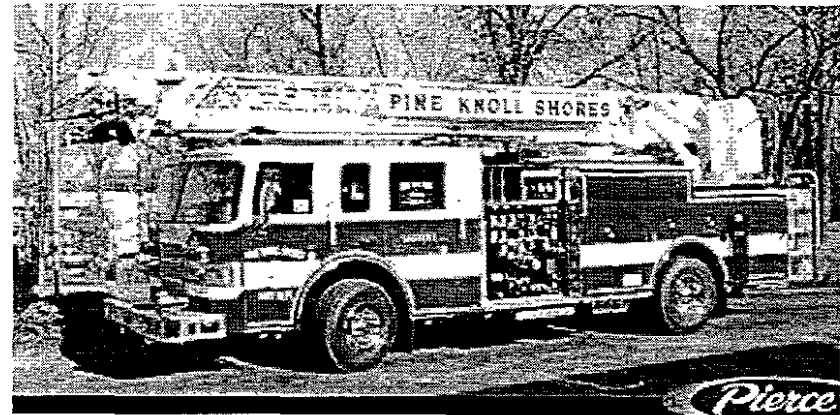
Pierce 75' Heavy Duty Ladder

- Access Concerns
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- Higher Density Residential Developments



Pierce 75' Heavy Duty Ladder

- Access Concerns
- Narrow easements
- Higher Density Residential





BULLETIN

TO: All Pierce Sales Representatives
FROM: Mark Meaders
DATE: 4/9/04
RE: Metals Surcharge

In light of recent increases in metals pricing, Pierce Manufacturing is announcing today the implementation of a metals surcharge for all products. This surcharge will be listed as a separate line item in Pride.

Effective for all bids processed after April 15, 2004, a metals surcharge will be added.

Effective for all orders accepted after June 1, 2004, the metals surcharge must be included as a condition of order acceptance. Exceptions will **ONLY** be approved by Jeff Resch or me. The surcharge, announced today, will affect the following models in the amounts shown:

Commercial- Body Only	Metals Surcharge	2.60 %
Custom Products- Chassis and Body	Metals Surcharge	3.96 %
Aerial Products- Device Only	Metals Surcharge	4.26 %
Rescue Products- Body Only	Metals Surcharge	3.64 %
Specialty Products	Metals Surcharge	2.77 %

All stock units with an RFP date after August 1, 2004 will have the surcharge added. An updated scheduled stock list will follow next week. For all products which require a commercial chassis, refer to the Bulletin dated March 31, 2004, issued by Sharon Hookham, for your commercial chassis pricing. For all states and municipalities that require a more lengthy notice period, we will honor the legal time period. This surcharge **will not** affect any truck booked and in the backlog.

Enclosed with this bulletin are recent articles that will assist you with your customers in explaining the reason for this increase/surcharge. You will not see individual component prices change. This surcharge will be added as a separate line item in Pride. We regret any difficulty this may cause but we must react to this critical market condition.

If you have proposals that will be booked at Pierce on or before May 31, 2004 you can select the Metal Surcharge, Not Required option in both the chassis and body category. All contracts received after May 31, 2004 must have the surcharge added or the person doing validation will add it automatically.

Any exceptions to the Metal Surcharge after June 1 must be approved by Mark Meaders or Jeff Resch.

Surcharge Detail Chart

To implement the metal surcharge in Pride, two lines will be added in the Administration section of each proposal, a Body Metal Surcharge and a Chassis Metal Surcharge. They will show up at the end of the proposal. The specific charges by body type and chassis type are as follows:

		Surcharge Prices	
		D-Net	List
Body	Appleton Pumpers and Specialty Products	\$ 5,500	\$ 6,471
	Appleton Brush Trucks	3,200	3,765
	Contender Pumpers and Specialty Products	3,600	4,235
	Contender Brush Trucks	1,200	1,412
	Platforms, Tillers, Skyarms, and Schwings	23,700	27,882
	All Ladders	17,200	20,235
	Skybooms, Telesqrts, and Snozzles	10,800	12,706
	HDRs	12,100	14,235
	Encores	4,700	5,529
	Contender Rescues	2,600	3,059
Chassis	Commercial	\$ 0	\$ 0
	Custom Contenders	4,100	4,824
	Saber	5,200	6,118
	Enforcer	6,700	7,882
	Dash, Arrow XT	7,300	8,588
	Quantum	9,300	10,941
	Lance	10,600	12,471

For example, if you are bidding a Dash 105' HDL, the surcharges would be as follows:

Surcharge Metal Increase, Body\$20,235 (list price)
 Surcharge Metal Increase, Chassis.....\$8,588 (list price)

The total surcharge would be \$28,823 at list price and \$24,500 at Dealer Net Price. The final charge to customer will be \$24,500.

If you have any questions about this please give me a call.

City of Milpitas, California

Budget # _____

Refer # _____

BUDGET CHANGE FORM

Type of Change	From		To	
	Account	Amount	Account	Amount
Check one:				
<input checked="" type="checkbox"/> Budget Appropriation	100-3841	\$980,000	100-812-4851	\$980,000
<input type="checkbox"/> Budget Transfer	390-2940	\$980,000	390-3931	\$980,000

Explain the reason for the budget change:

In order to serve the land use configurations of Midtown area projects (e.g., Parc Place, KB Elmwood, Senior Housing, Library) and achieve the desired density configurations; fire apparatus equipment must conform to the environment rather than the environment conforming to the equipment. Staff is recommending a ladder truck and engine that have a shorter wheelbase and tighter turning radii, for deployment in the Midtown area. These apparatus are already part of a bona fide governmental bid process and are available at a competitive bid price. To avoid unnecessary cost increases and expedite the timing of equipment delivery, staff recommends the Redevelopment Agency advance and appropriate funds for the Purchase Order of these two apparatus before the June 1 metal surcharge takes effect—followed by a reimbursement from Midtown projects, at a later date. The cost estimate for each of these two apparatus is \$625,000 for the ladder truck; and \$355,000 for the engine.

Approve the budget appropriation of \$980,000 to purchase and equip one Ladder Truck and one Fire Engine that conform to the Midtown Specific Standards with the Redevelopment Agency advance.

☒ Check if City Council Approval required.

Meeting Date: May 18, 2004

Itemization of funds, if needed:			Amount
Requested by:	Division Head:	Date:	
	Department Head:	Date:	
Reviewed by:	Finance Director: <i>Mr. C. Karl</i>	Date: 5/11/04	
Approved by:	City Manager:	Date:	
Date approved by City Council, if required:			Confirmed by: